Glossary

absorption - A process in which one material (the absorbent) takes up and retains another (the absorbate) with the formation of a homogenous mixture having the attributes of a solution. Chemical reaction may accompany or follow absorption.

acetone - A solvent and thinner for paint, varnish, and lacquer, also used to clean and dry parts of precision equipment. Very flammable and volatile liquid. Explosive. Moderately toxic if inhaled.

acid rain - Rain that forms when certain pollutants, such as sulfur dioxide and oxides of nitrogen, mix with water vapor. It is acidic and falls to the earth as snow, rain, and fog.

air impairment - Unhealthy levels of air pollutants necessitating burn bans. Local air quality authorities may declare air impairments based on monitored levels of pollution and weather forecasts.

Air Quality Index (AQI) - Also known as the Pollution Standards Index. This is a scale (0-500) developed by the government to measure how much air pollution is in the air. It is often used in weather reports.

alloy - A homogenous mixture of two or more metals.

aluminum - A silvery nonferrous metal found in the ore bauxite. It is used in making hard, light, corrosion-resistant materials.

alveoli - Tiny air sacs in the lungs where the exchange of gases with the bloodstream takes place.

ambient air - The surrounding air (excluding indoor air).

antidote - A remedy that counters the effects of a poison.

aquifer - A porous layer of rock that carries a usable supply of ground water.

area source - A pollution source not confined to one point, but spread out in a large geographical area. Area sources include automobiles, wood stoves and small businesses.

bauxite - The claylike ore from which most aluminum is made.

biodegradable - The property of a substance that allows it to be broken down by microorganisms into simple, stable compounds such as carbon dioxide and water.

bioaccumulation - The process in which certain substances, like pesticides or heavy metals, work their way into a river or lake, move up the food chain, and are eaten by aquatic organisms, which in turn are eaten by birds, mammals, or humans. The substances become more and more concentrated in tissues and internal organs as they move up the chain.

bottom ash - The ash residue (unburnables) remaining on the grates or in the combustion chamber of the incineration or energy recovery facility.

BTU - British Thermal Unit. A measurement of heat: the amount of heat needed to raise the temperature of one pound of water 1 degree Fahrenheit.

calorie - The amount of heat energy needed to raise the temperature of one gram of water by 1 degree Centigrade at standard atmospheric pressure.

capillary attraction - The attractive force between two unlike molecules that causes a liquid to rise.

capillary water zone - That soil zone in which underground water is held above the water table by capillary attraction.

carbon dioxide (CO2) - A colorless, odorless gas given off by animals and humans, and used by plants. It is also created when fossil fuels burn.

carbon monoxide (CO) - A colorless, poisonous gas formed when carbon-containing fuel is not burned completely. Sources include vehicle emissions, industry and wood burning. Related to respiratory and heart disease.

catalytic converter - A device in cars that reduces air pollution by changing harmful pollutants into water and carbon dioxide.

caustic - Capable of corroding, burning, dissolving, or otherwise eating away by chemical action.

caustic soda - (See SODIUM HYDROXIDE)

chemistry - Science of the composition, structure, properties, and reactions of matter.

chlorine - Used in the manufacture of many chemicals, as a disinfectant for swimming pools, hot tubs, etc., in shrink-proofing wool, and in drinking water purification. A pungent and very reactive gas. Has been used as a military poison in chemical warfare. Very dangerous in contact with ammonia, turpentine, ether, and some other chemicals.

chlorinated - (1) Containing chlorine atoms as part of the chemical structure, as in chlorinated hydrocarbons or chlorinated solvents. (2) Addition of chlorine to drinking water to kill infectious bacteria or to oxidize undesirable compounds.

chlorofluorocarbons (CFCs) - A family of gases used as coolants for refrigeration and air conditioning, solvents, blowing agents for foam insulation and various other purposes. They are the chief agent responsible for the depletion of the high altitude ozone layer that protects us from the sun's ultraviolet rays.

clitellum - The thickened, glandular, saddlelike portion of the body wall of earthworms.

commercial waste - Waste from all nonresidential sources.

commodity - A commercial article, produced specifically for sale and profit.

compost - As a noun, the humuslike organic product generated from composting. As a verb, to decay.

composting - The microbial degredation of organic matter into a useful product.

conservation - The preservation and protection of natural resources from loss or waste.

consumer - A person who buys goods or services for his own needs and not for resale or production of other goods for resale.

contaminate - To adversely affect the quality of air, water, or soil by contact or mixture with a substance.

corrode - To eat into or wear away gradually, as by rusting, or by the action of chemicals.

corrosive - A chemical agent that reacts with or attacks the surface of a material causing it to deteriorate or wear away.

criteria pollutants - A category of pollutants identified by EPA for which standards for protecting human health have been set. Includes carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, particulate matter and lead.

cycle - To circle, return, or occur again.

decibel - A unit of the intensity of sound. A measurement of 50 dB is considered to be moderate, 80 dB loud. At intensities over 100, sound becomes intolerable.

decompose - To decay, rot, come apart, change form, break down into simpler components.

dioxin - A commonly used name for the tetra chloro form of a family of compounds, basically dibenzo-para-dioxins. Tests on laboratory animals indicate them to be among the most toxic man-made chemicals known. Have been found to be contaminants in some commercial products.

disinfectant - A physical process or chemical that kills pathogenic (disease-causing) organisms in water. Chlorine is often used to disinfect sewage treatment effluent, drinking water supplies, wells, and swimming pools.

disposal - The discharge, deposit, injection, dumping, incineration, leaking or placing of any waste into or on any land, air, or water.

drop box - Facility used to collect self-hauled waste or recyclable separated materials from individuals and businesses.

dump - To throw away garbage or solid waste.

dumps - Now illegal, dumps were open, unsanitary disposal sites used prior to sanitary landfills.

ecology - The interrelationships between organisms and their environment.

ecosystem - A system made up of a community of animals, plants, and bacteria and the physical and chemical environment with which it is interrelated.

emission check program - A program of the Air Quality Program that tests motor vehicles to ensure that all factory installed emission control systems are working properly. The emission check program identifies the most polluting vehicles and requires the proper repair of these vehicles.

emission inventory - A data bank of air pollution statistics, identifying the type, size and location of various pollution sources. Categories include point sources and area sources.

energy - The capacity to perform work or produce a change from existing conditions.

energy recovery - The recovery of energy in a usable form from mass burning or refuse-derived fuel incineration, pyrolysis, or any other means of using heat of combustion of waste.

energy recovery facility - A plant that generates energy by burning waste.

environment - All the conditions, circumstances, and influences affecting the development or existence of organisms.

EPA - Environmental Protection Agency, a federal agency responsible for environmental concerns.

Federal Clean Air Act - The first major legislation to target air pollution. First passed in 1963, with subsequent revisions in 1970, 1977, and 1990.

ferrous metals - Iron and alloys containing iron, generally magnetic.

flammable - Easily started on fire, capable of burning rapidly.

fly ash - Noncombustible residual particles from the combustion process, carried by smoke, air, and flue gas. In correct procedures, fly ash is prevented from escaping from the incinerator by air pollution control devices like scrubbers or precipitators.

functional standards - Criteria for solid waste handling expressed in terms of expected performance.

garbage - All waste considered worthless and thrown away.

glass - Any of a large class of materials that solidify from a molten state without crystallization, and are generally transparent or translucent. A recyclable and durable material.

global warming - A predicted increase in climatic temperature due to increased carbon dioxide levels from cars, power plants, and industry.

greenhouse effect - Heat trapped in the atmosphere by carbon dioxide and other gases. Altered weather patterns and rising sea levels may result.

Gross National Product (GNP) - The total market value of all the goods and services produced by a nation during a specified period.

ground water - The supply of fresh water found beneath the earth's surface, in cracks and crevices in stone, and in spaces between pieces of gravel and grains of sand. Usually in aquifers, which supply wells and springs.

hazardous (dangerous) waste - Those wastes which cause special problems because they are poisonous, explosive, corrosive of metal or skin, harbor disease-causing microorganisms, are radioactive, or are dangerous for any other reason(s).

household hazardous waste - Waste substances from a home that have any hazardous characteristics.

hydrocarbons - Toxic compounds found in fossil fuels that contain carbon and hydrogen. Some are capable of causing cancer. A type of volatile organic compound.

impermeable - Not permitting water or another fluid to pass through.

incineration (solid waste) - Reducing the volume of solid wastes by use of an enclosed device using controlled flame combustion.

incinerator - A furnace, boiler, kiln, etc. for burning wastes under controlled conditions.

ingestion - To take into the body, usually by swallowing.

inorganic - Composed of matter that is not animal or vegetable not having the organized structure of living things.

interface - A shared boundary, at which one substance, component, or system comes into contact with another.

inversion - An atmospheric condition in which a layer of warm air traps a layer of cooler air next to the ground, trapping pollutants near the ground and preventing the air from dispersing.

ions - Particles that have a positive or negative charge due to having an unequal number of protons and electrons.

irritant - A substance that causes pain, inflammation, annoyance, or soreness upon contact or when breathed.

landfill - A disposal facility at which solid waste is placed on or in land. (See SANITARY LANDFILL)

leachate - Liquid that has percolated through solid waste and/or been generated by decomposition of solid waste. Contains dissolved, extracted, or suspended materials. This liquid may contaminate ground or surface water, and is especially a problem in areas of high rainfall and porous, sandy-gravelly soil.

lead (Pb) - A heavy gray metal found in gasoline, paints, plumbing, etc. Exposure can affect the nervous system.

litter - Waste materials carelessly discarded in an inappropriate place. Litter is waste out of place.

manifest - A list of cargo hauled on a truck, airplane, ship, etc.

methane - A colorless, odorless, flammable gaseous hydrocarbon present in natural gas and formed by the decomposition of carbonaceous matter. Can be used as a fuel.

mnemonic - A formula, rhyme, jingle, or another device used as an aid to memorize something.

mobile source - A moving source of air pollution, such as cars and trucks.

monomer - (1) A simple molecule which is capable of combining with a number of other molecules into a long chain to form a polymer.

mutation - An inheritable alteration of the genes or chromosomes of an organism.

National Ambient Air Quality Standards (NAAQS) - Primary and secondary standards set at a national level for criteria pollutants. The purpose of these standards is to protect human health.

natural resources - A material source of wealth, occurring in nature, such as timber, fresh water, wildlife, or a mineral deposit.

nitrogen cycle - The continuous cyclic progression of chemical reactions in which atmospheric and other nitrogen sources are compounded, dissolved in precipitation, deposited in soil, assimilated and metabolized by bacteria and plants, consumed by animals, and returned to the atmosphere by organic decomposition.

nitrogen oxides - Gases produced by high temperature combustion in cars, industry and power plants furnaces. One of the major components of acid rain and smog.

nonattainment area - An area designated by EPA in which National Ambient Air Quality Standards are exceeded.

nonferrous metals - Metals and alloys which contain no iron, such as aluminum, copper, brass, and their alloys.

nonrenewable resources - Natural materials which, for one reason or another (scarcity, the great length of time required for their formation, their rapid depletion rate, etc.) are considered to be finite and exhaustible.

nonreturnable - A container that is not accepted by the retailer or supplier for refilling.

opacity - A relative measurement of how much a view is blocked by smoke. It is expressed as a percentage. State law limits opacity from wood stoves and fireplaces to 20%.

open burning - The combustion of material of any kind in an open fire or in an outdoor container (such as a burn barrel), except for agricultural and silvicultural fires.

Operating Permit Program (Title V) - A renewable permit program for industrial and commercial sources of air pollution. The program is required by federal law. It lists in one document all the requirements concerning air emissions that apply to any source that is subject to the program.

organic - Living or once living material.

organic gardening - Gardening with fertilizers consisting only of naturally occurring animal and/or plant material, with no use of man-made chemicals or pesticides.

oxides of nitrogen - See nitrogen oxides.

oxygenated gas - Gasoline that has an added ingredient, either ethanol or methyl-tertiary-butyl ether (MTBE), that increases the amount of oxygen in the fuel blend. This increased oxygen makes the combustion process more complete, reducing carbon monoxide emissions.

ozone (O_3) - A poisonous, bluish gas form of oxygen, which is the result of chemical reactions between volatile organic compounds and nitrogen oxides. Destroys crops and impairs breathing.

ozone layer - The layer of the upper atmosphere in which a relative concentration of ozone absorbs a significant amount of in-coming potentially hazardous ultraviolet radiation.

packaging - A commodity's wrapping, sealing, or container often designed to attract purchasers as well as to protect a product.

paper - A thin material made of cellulose fiber pulp, derived mainly from wood. Paper can be recycled many times before its fibers become too short for reuse.

particulate matter (PM_{10}) - Airborne particles resulting from wood stove burning, outdoor burning, road dust and industry, which can get in lungs and impair the respiratory system.

pest - A nuisance plant or animal that is capable of interfering with the living environment.

pesticide - Any substance used to kill nuisance organisms.

petroleum - A naturally occurring flammable liquid solution of hydrocarbons of organic origin used to make such products as natural gas, gasoline, lubricating oils, and plastic.

pH - A scale numbered from 0 (acidic) to 14 (alkaline) used to measure the degree of acidity or alkalinity in a substance. Acid rain has a pH of less than 5.6.

plastic - Any of a large class of complex organic compounds formed by polymerization; capable of being molded or cast into various shapes and films.

plume - Visible smoke emitted from smoke stacks or chimneys.

point source - Identifiable pollution sources such as large industries that emit significant levels of air pollutants in a particular geographic location.

pollution - Contamination of air, soil, or water by the discharge of wastes or other harmful substances.

polymers - A large molecule containing a chain of chemically linked subunits called monomers.

pollution - The contamination of soil, water, or the atmosphere by the discharge of wastes or other harmful materials.

potency - The strength or concentration of a substance.

propellant - A substance added to an aerosol formulation that assists in the ejection of the product from the container.

rationale - A statement or explanation of fundamental reasons.

reactive - Tending to participate in reactions. (See REACTION)

reaction - The mutual action of substances undergoing chemical change, and the state resulting from such changes.

recycle - The collection and reprocessing of manufactured materials for reuse either in the same form or as part of a different product.

recycling center - A site where manufactured materials are collected and resold for reprocessing. Types of recycling centers include: 1. Buy-back: a center where the recycler pays for materials. 2. Donation: a center where the recycler accepts donated materials. 3. Drop-off: an unattended donation station.

reduction, waste - Reducing the amount of waste by careful buying, less wasteful practices, or reusing materials.

refuse-derived fuel - A solid fuel obtained from municipal solid waste that has been processed to improve its combustion characteristics.

renewable resource - Natural resource which can be renewed or regenerated by natural ecological cycles or sound management practices, such as trees and water.

resin - Any of a class of solid or semisolid organic products, natural or man-made, with no definite melting point, generally of high molecular weight.

resource recovery - A general term used to describe the extraction of economically usable materials or energy from wastes.

respiratory system - A body's system for breathing, including the nose, throat, and lungs.

reuse - To extend the life of an item by cleaning it and using it again as is, repairing or modifying it, or by creating new uses for it.

sanitary landfill - A specially engineered site for disposing of nonhazardous solid waste on land. The site is constructed so that it will reduce hazards to public health and safety. Under federal law, a sanitary landfill must have an impermeable lower liner to block the movement of leachate into ground water, a leachate collection system, gravel layers permitting the control of methane, and other features. Waste is spread in layers, compacted to the smallest practical volume, and covered at the end of each operating day.

saturated - Completely filled, loaded to capacity.

SIP - State Implementation Plan, a plan the state adopts to ensure that state air quality objectives are met.

sludge - Any semisolid, heavy waste deposit, sediment, or mass that precipitates in a sewage system, septic tank, or municipal sewage treatment operation.

smog - A term originally coined to mean a combination of smoke and fog. Now used commonly to refer to pollution in the air caused by hydrocarbon and oxides of nitrogen in the presence of sunlight (low level ozone).

sodium hydroxide - (lye/caustic soda) A corrosive chemical, irritating to eyes, skin, and mucous membranes used in making soap and detergents, synthetic textiles, paper, aluminum, and in refining vegetable oil.

solid waste - Regularly collected wastes from households, institutions, agriculture, industry, and commercial establishments. May contain liquid and nonliquid substances which may be hazardous.

solid waste management - The systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

solution - A mixture in which the components are uniformly dissolved (homogenous), do not separate on standing, cannot be separated by filtration.

source separation - The separation of different kinds of solid waste at the place where the waste originates. Sorting out recyclable materials from nonrecyclables in business, household, or school waste.

stationary source - An industrial smoke stack or other non-moving source of air pollution.

stratosphere - The atmospheric layer which lies over the troposphere and is 25 miles from the surface of the Earth.

surface water - All water naturally open to the atmosphere: lakes, rivers, ponds, streams, reservoirs, other inland waters, and saltwater bays, sounds, estuaries, etc.

sulfur dioxide (SO_2) - A gas or liquid resulting from the burning of sulfur-containing fuel. May cause breathing problems.

suspension - A nonhomogenous mixture that separates into layers if allowed to stand, and is either translucent or opaque.

synergy (synergism) - That property of an association or combination in which the total effect, production, or action of the components working together exceeds that of the sum of the individual ingredients or members working independently.

thermodynamics - The science concerned with the relations between different forms of energy, and the conversion of one into another.

throwaway - A disposable waste item, not designed for reuse or recycling.

toluene - Used in gasoline blending, and in the manufacture of paints and solvents, plastic toys and model airplanes, explosives (TNT), saccharin, and other products. Flammable and a dangerous fire risk. Explosive. Toxic by inhalation or absorption through the skin.

toxic - Harmful, destructive, or deadly. Poisonous.

toxic air pollutants - Compounds which may induce cancer and/or other health problems at extremely low concentrations.

toxicant - A poison.

toxicity (acute) - The ability of a substance to cause poisonous effects soon after a single exposure or dose.

toxicity (chronic) - The capacity of a substance to cause long-term adverse effects upon human health.

transfer station - A permanent intermediate collection facility used by individuals and private or municipal haulers to transfer solid waste into a larger transfer vehicle for transport to another handling facility or to an ultimate disposal site. Transfer stations may include recycling facilities.

troposphere - The layer of atmosphere closest to the Earth's surface containing the air we breathe. It is about 10 miles thick.

unsecured load - Any material liable to fall or blow from a moving vehicle and become a hazard, litter, or debris upon a roadway.

vermicompost - Mixture of partially decomposed organic waste, bedding, worm castings, cocoons, worms, and other associated organisms.

vinyl acetate - A chemical used in latex paint, safety glass interlayers, paper coating, adhesives, and other uses. Very flammable and a dangerous fire risk. Toxic by inhalation and ingestion.

volatile organic compounds (VOCs) - Unstable or carbon-based compounds that, when combined with nitrogen oxides, will produce ozone.

volume - The capacity of a container: how much something can hold.

wildlife - Wild animals living in an undomesticated natural state.

worm castings - Worm manure: undigested material, soil, and bacteria deposited by worms.

worm cocoon - Structure formed by the clitellum which houses embryonic worms until hatching.